Suggested Pathway

9th Grade

-Optional: Exploring Technology or
    Foundations of Manufactoring

10th Grade

- Optional: Technical Design I and
    Robotics & Automation

11th Grade

-Physics with Technology

-Robotics & Automation

  -Technical Design I

12th Grade

    -ALC Pre-Engineering

    -ALC Engineering Design

    -ALC Materials & Processes

    -ALC Technical Design II

    - ALC Robotics &

      Automation

ALC
Advanced Learning Center

Engineering
DESIGN

Career and College Readiness

ALC

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NEBO SCHOOL DISTRICT
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CAREER OUTLOOK

Employment of engineers is expected to grow about as fast as the average (7 - 13%) for all occupations over the next decade, but growth will vary by specialty. Overall job opportunities in engineering are expected to be good.

Overall engineering employment is expected to grow by 11 percent over the 2008-2018 decade, about as fast as the average for all occupations. Engineers traditionally have been concentrated in slower growing or declining manufacturing industries, in which they will continue to be needed to design, build, test, and improve manufactured products. However, increasing employment of engineers in engineering, research and development, and consulting services industries should generate most of the employment growth.

ENGINEERING DESIGN ▶▶

MISSION

Our mission is to prepare students interested in careers relating to science, technology, engineering, and math (STEM) principles in an exciting, relevant, and real-world engineering design environment. This program is designed to attract students to the field of engineering and technology through exposure to courses relating to pre-engineering, design, and manufacturing.

• Provide pre-engineering courses that use technology (Solid Modeling software, rapid prototype printers, etc.) and apply learned skills to problem-solving.
• Stimulate interest in technology, engineering principles and applied sciences.
• Expose students to "real world" experiences in different fields of engineering.
• Spark interest in college-level education in the disciplines of technology and engineering.
• Highlight the vast potential for future employment in engineering.
• Develop an understanding of how technology and engineering can benefit society with the requisite responsibilities of ethical and moral conduct.

Pre-Engineering

Engineering Design

Materials & Processes

Technical Design 2

COURSES

Pre-Engineering
(ENGR 1000 UVU CE Credit - may require Math 1010 pre-requisite): Introduces various areas of engineering to pre-engineering students about the contributions engineers make to our modern society. Includes a brief history of engineering and discussions about what engineers really do. Discusses professional ethics, responsibilities, and career opportunities. Emphasizes problem-solving skills and the processes and procedures of engineering design. Includes lectures, projects, guest speakers, field trips, and in-class exercises.

Engineering Design: This course emphasizes the development of a design. Students use computer software to produce, analyze and evaluate models of project solutions. Study design concepts of form and function, then use state-of-the-art technology to translate conceptual design into reproducible products.

Career Outlook

Civil Engineer
Industrial Engineer
Mechanical Engineer
Manufacturing Engineer
Materials Engineer
Chemical Engineer

Materials & Processes:
In this course, students are introduced to different types of materials (e.g., iron, aluminum, plastic, composites, wood and laminates) and the different processes used with these materials. As students study the different properties of these materials, they will demonstrate the ability to use different materials and processes they have learned about to produce physical parts and products.

Technical Design 2
(EDGT 1071 UVU CE Credit)
For engineering, manufacturing engineering, industrial design, and engineering graphics (drafting) students, as well as anyone interested in solid modeling. A basic 3D computer modeling course which emphasizes the development of 3D machine parts, assemblies, and drawings in a constraint-based modeling environment using SolidWorks. Emphasizes the feature-based design process, which stimulates actual manufacturing processes with 2D sketching tools and with 3D modeling tools including extrusions, revolutions, sweeps, lofts, coils, shells, placed features, patterns, and many others. Also teaches creation of basic multi-part assemblies, constraint-driven assembly animation, and generation of detailed production drawings.